Remarks

Applicant hereby responds to the official action of January 11, 2007, wherein formal objections were made to the claims, allowable subject matter was indicated as to claim 7, and an objection of grounds of alleged new matter was made with respect to the preliminary amendment submitted when entering the US national phase of this PCT application.

Regarding the objection on grounds of new matter, applicant sought in the preliminary amendment to correct a plain typographical error in a heat transfer and complementary error function equation erfc found in the specification and claims. The term had been shown as a squared term and should have been shown as a square root. However, the equation itself is well known, such that a person of ordinary skill would readily see the error and how to correct it. More particularly, the two equations were written:

$(T-T_s)/(Tm-T_s)=$ erfc(X)   and   X=Z/(2*(α*t)^2)

   but should have been written:

$(T-T_s)/(Tm-T_s)=$ erfc(X)   and   X=Z/(2*(α*t)^(½)).

It may be noted that asterisks in equations conventionally represent multiplication. Carets conventionally represent raising to a power. Therefore, an alternative way to typeset the same identical equation shown above (the correct one) is:

$$\frac{(T-T_s)}{(T_m-T_s)}=erfc(X) \quad \text{and} \quad X=\frac{Z}{2\sqrt{at}}$$

The equations represent calculation of transient heat flow and the complementary error function, and are known to the person of ordinary skill. In the official action, applicant's statement to that effect in the preliminary amendment is questioned for lack of evidence that the equations are indeed known to the person of ordinary skill.

Therefore, applicant attaches exhibits to these remarks as evidence demonstrating the conventional nature of the equation to be corrected. The equation can be found in various published text books respecting heat transfer. It is typically set out in the section concerning unsteady heat transfer for semi-infinite solids. Such textbooks may also provide tables of erfc values that corresponding to a given value of X. As evidence thereof, attached Exhibit 1 is Incropera, F. et al., "Fundamentals of Heat and Mass Transfer," 4th Ed., p. 239, JP Wiley, showing the equation. Exhibit 2 is the PhD thesis of Ming Jay Liou, "Minimizing Residual Stresses in Molded Parts" (see equation 3.2). The thesis cites an earlier source for the equation, namely Holman, J.P., "Heat Transfer," McGraw-Hill, Inc., 1976 as the source. Exhibit 3 is a collection of erfc tables that show the value of erfc for listed values of X. These exhibits are evidence that the term "erfc(X)" is known and used and show the equivalence of the term and the correct equation shown above. Reconsideration and withdrawal of the rejection are requested.

Claims 1-10 and 12-15 were considered indefinite for the term "positing" in claim 1 and for extraneous text copied into claims 2 and 12. These matters have been corrected and no new matter is presented.

The term "positing" in claim 1 (now at line 20) has be changed to "predetermining." No new matter is presented. The dictionary defines "posit" as 1. to dispose or set firmly: FIX; 2. to assume or affirm the existence of: POSTULATE; and 3. to propose as an explanation: SUGGEST. In context, claim 1 defines starting with (positing) a suggested pre-injection temperature to be used for the molten material, and mathematically determining a thickness of a thermal insulation temperature booster at least along a part of the mold cavity along the flow path from that predetermined temperature and other factors. As such, "predetermining" is apt. The term "predetermining" also is used in this way in the specification at paragraph [0074].

The extraneous text in claim 2 has been removed. In addition, applicant has corrected claim 2 and certain other claims for matters of form, especially for antecedent basis and to render each claim in a full sentence. The amendment of claim 2 has

rendered claim 5 redundant, and claim 5 has been canceled. Applicant requests reconsideration and withdrawal of the rejections under 35 U.S.C. §112, 2d paragraph.

Claims 1-6, 8, 9, and 11-24 were rejected over prior art under 35 U.S.C. §§102 or 103. Applicant is pleased to note that method claims 7 and 10 were considered directed to allowable subject matter and would be allowed if amended so as not to depend from rejected claims. Claim 10 depended from claim 7. Claim 1 has been amended to incorporate the subject matter of claim 7 and claim 7 is now canceled. Thus claims 1-4, 6 and 8-10 are now allowable in accordance with the official action. Apparatus claims 11-24 have been canceled, without prejudice to their possible presentation in a continuing application.

Inasmuch as applicant has complied with the indication of allowable subject matter by placing claim 7 in independent form (as amended claim 1), all the claims are allowable as now presented. Applicant need not comment on the application of the cited prior art to the claims.

The claims are in proper form. The differences between the invention and the prior art are such that the subject matter claimed as a whole is not shown to have been known or obvious. Reconsideration and allowance of claims 1-4, 6 and 8-10 are requested.

Respectfully submitted,

Date: April 10, 2007   /Stephan Gribok/
                             Stephan P. Gribok, Reg. No. 29,643
                             Duane Morris LLP
                             30 South 17th Street
                             Philadelphia, PA 19103-4196
                             tel. 215-979-1283
Docket No.: D4958-12   fax. 215-979-1020
                             SPGRIBOK@DUANEMORRIS.COM